REMARKS

Favorable reconsideration of this application in light of the following discussion is respectfully requested.

Claims 1, 2, 4, 8, 11, 14 and 15 have been amended to more clearly describe the claimed invention. Claims 1-8 and 11-15 are pending in the present application.

REJECTION OF CLAIMS 1-14 UNDER 35 U.S.C. § 103(a) AS BEING UNPATENTABLE OVER TANABE et al. (U.S. PATENT NO. 5,705,906) IN VIEW OF JYUMONJI (U.S. PATENT NO. 5,987,591)

In the Office Action, at page 3, numbered paragraph 7, claims 1-14 were rejected under 35 U.S.C. §103(a) as being unpatentable over Tanabe in view of Jyumonji. This rejection is traversed and reconsideration is requested.

To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). "All words in a claim must be considered in judging the patentability of that claim against the prior art." In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). If an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious. In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988). The reference must be viewed without the benefit of impermissible hindsight vision afforded by the claimed invention. Hodosh v. Block Drug Co., Inc., 786 F.2d 1136, 1143 n.5, 229 USPQ 182, 187 n.5 (Fed. Cir. 1986).

Referring to the references relied upon by the Examiner, attention is drawn to Tanabe and Jyumonji. The primary reference relied upon by the Examiner, Tanabe, discloses locating a teaching pendant near a personal computer so that the teaching pendant can be used as a display unit for creating a program for a robot and displaying a state of the robot. Tanabe, column 3, lines 22-26. Specifically, Tanabe only discloses that the teaching pendant of the robot display the state of a robot *controller* itself and data that has been inputted in the robot *controller* itself by an operator via the teaching pendant (touch panel). Tanabe, column 3, lines 55-60. Further, the image displayed on the teaching pendant is supplied by an image signal from the personal computer. Tanabe at column 2, lines 64-67. As such, the image displayed on the teaching pendant 10 is the same as the image displayed on a display screen of the personal computer.

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The secondary reference relied upon by the Examiner, Jyumonji, relates to a multiple-sensor robot system for measuring an object using a three-dimensional-position-measuring sensor used in combination with a robot. As admitted by the Examiner, Jyumonji does not teach or suggest manipulating the image data using a teaching pendant.

Independent Claims 1, 2, 4, 8, 14, and 15

Independent claim 4 of the present application, as amended, recites, "An image processing apparatus for a robot ... comprising: a unit for fetching image data from a camera of an image of a workpiece to be worked on by the robot; ... a portable teaching pendant ... and said teaching pendant comprises ... a display unit, and can display on the display unit the converted image, and comprises a unit used for manipulation for image processing ..."

In a non-limiting example, the image processing apparatus claimed in claim 4 acquires an image of a workpiece (an object to be worked on by a robot) by a camera, analyzes the captured image of the workpiece to calculate the position and direction of the workpiece, informs the robot of the calculated position and direction of the workpiece, and allows the robot to work the workpiece accurately.

Tanabe and Jyumonji, neither alone nor in combination, teach or suggest an image processing apparatus for a robot having a unit for fetching image data from a camera of an image of a workpiece to be worked on by the robot and a portable teaching pendant for manipulating the image processing apparatus and teaching a program for processing an image.

Instead, Tanabe discloses having a teaching pendant of a robot controller of a robot that displays an image that includes only the state of the robot controller itself and data that has been inputted in the robot controller by an operator via the teaching pendant (touch panel). Tanabe, column 3, lines 55-60. The image that is displayed on the teaching pendant (graphical user interface) is supplied by an image signal from a personal computer. Tanabe at column 2, lines 64-67. Thus, the image displayed on the teaching pendant 10 is the same as the image displayed on a display screen of the personal computer and not of an image of a workpiece to be worked on by the robot that is taken by a camera.

Applicant believes that the Examiner has improperly construed the meaning of "image data from a camera," as recited in claim 4 of the present application. In particular, Applicant believes that that the Examiner is confusing the terms "icon" and "picture" of Tanabe with "image data from a camera" of the present invention. The terms "icon" and "picture" express the indication of a button displayed on a screen by means of an icon or picture instead of by means of characters. Unlike Tanabe, in the present application, the image data acquired from the

camera is of a piece of an object to be worked on by the robot and the image data does not involve the state of the robot. Thus, the "picture" or "icon" that is displayed on the teaching pendant in Tanabe does not correspond to "image data from a camera of an image of a workpiece to be worked on by the robot."

In addition, the image data acquired by the camera does not correspond to "input data" of Tanabe, as asserted by the Examiner in the Office Action. Specifically, Tanabe only discloses that the teaching pendant of the robot display the state of a robot *controller* itself and data that has been inputted in the robot *controller* itself by an operator via the teaching pendant (touch panel). Tanabe, column 3, lines 55-60.

Tanabe does not teach or suggest "a unit used for manipulation for image processing," as is disclosed in claim 4 of the present application. In particular, Tanabe does not teach or suggest using a teaching pendant to manipulate the image data that is displayed on the teaching pendant. Instead, Tanabe discloses that the teaching pendant should be located at a location where the personal computer is located to enable the teaching pendant to be used as a display unit for creating a program for the robot. Thus, the generating or editing of the robot program is done *via the personal computer* and not via the teaching pendant. In other words, the teaching pendant, as disclosed by Tanabe, functions as a display for the robot program that is generated or edited at the personal computer and the images displayed are not controlled by the teaching pendant. Tanabe at column 3, lines 26-48.

Further, Tanabe does not teach or suggest a display unit having a "switching mode or a superposition mode," as is disclosed in claim 4 of the present application. In a non-limiting example of claim 4 of the present application, as the capacity of the image to be processed by an image processing apparatus is relatively large, an image is displayed on the whole area of a screen of a display unit if the display unit is one having such a size as is mounted on a portable teaching pendant. Accordingly, to solve this problem, indications of picture are switched from each other, and character and numerical information and picture information are superposed on each other. Therefore, the Examiner wrongly asserts in the Office Action that "since the display unit can be used as an operating system, it inherently allows users to process multi-tasks simultaneously, or allows a user to select either a switching mode or a superposition mode." The Examiner incorrectly supports this assertion by describing that when the jog key switch in Tanabe is pressed, the mode of the teaching pendant is switched. Office Action, page 4, lines 12-16. Applicant disagrees with the Examiner's assertion because the jog key is not related to the display unit, and instead, when the jog key is pressed, the jog key is used to move or operate the robot.

Applicant disagrees with the Examiner's assertion that Tanabe "assumes" that a camera is mounted on the robot because, without such camera, the teaching pendant would not be able to obtain the state of robot and input data. The Examiner offers no supporting evidence to support such a conclusion. In fact, Tanabe discloses a state of robot that is obtained by the teaching pendant without the need for a camera, reciting:

> "If the robot in a **stationary state** unintentionally starts its operation by any chance ... the operator ... releases the teaching pendant. ... Further, the teaching pendant is provided with a liquid crystal display unit to enable the operator to get the information of the robot at hand, so that the operator can carry out all the operations such as the confirmation of robot operation and the like also through the teaching pendant."

Tanabe, column 1, lines 32-45.

Further, Applicant disagrees that the Examiner has properly supported a motivation to combine Tanabe with Jyumonji simply because Tanabe discloses "displaying a state of the robot." The Tanabe reference is specifically limited to a teaching pendant used with a robot controller for operating the robot via a personal computer and displaying the display from the personal computer on the teaching pendant. The Jyumonji reference, as admitted by the Examiner, does not disclose manipulating the image data using a teaching pendant. Therefore, the combination of Tanabe and Jyumonji only discloses displaying the state of the robot on the display unit of the teaching pendant and does not teach or suggest displaying an image from a camera of a workpiece to be worked on by the robot, as is recited in claim 4 of the present application.

In light of the foregoing argument, the motivation to combine the references is not apparent. MPEP § 2142 states that "[w]hen the motivation to combine the teachings of the references is not immediately apparent, it is the duty of the Examiner to explain why the combination of the teachings is proper." The Examiner is required to present actual evidence and make particular findings related to the motivation to combine the teachings of the references. In re Kotzab, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000); In re Dembiczak, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999). Broad conclusory statements regarding the teaching of multiple references, standing alone, are not "evidence." Dembiczak, 50 USPQ2d at 1617. The factual inquiry must be based on objective evidence of record, and cannot be based on subjective belief and unknown authority. In re Lee, 61 USPQ2d 1430, 1433 (Fed. Cir. 2002)

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The proposed combination of Tanabe and Jyumonji changes the principle of operation of the prior art invention being modified and is not sufficient to render the claim prima facie obvious. "If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims prima facie obvious." Citing In re Ratti, 270 F.2d 810, 123 USPQ 349 (CCPA 1959) Tanabe does not teach or suggest obtaining an image of a workpiece to be worked on by a robot to be displayed on a display of a teaching pendant. Including such a feature would change the principle of operation of Tanabe by requiring additional elements, such as "a unit for fetching an image data from a camera" and " a unit for converting image data from the camera." Therefore, Applicant argues that even if the suggested combination of Tanabe and Jyumonji teach the features of claim 4 of the present application, their combination requires a substantial reconstruction and redesign of the elements shown in Tanabe as well as a change in the basic principle under which Tanabe was designed to operate.

Therefore, for at least the reasons discussed above, independent claim 4 patentably distinguishes over the references relied upon by the Examiner.

Each of amended independent claims 1, 2, 8, 14, and 15 recites nearly identical language as claim 4; therefore, each of claims 1, 2, 8, 14, and 15 patentably distinguishes over the references relied upon by the Examiner for at least the reasons discussed above.

Further, claim 6 depends from independent claim 1, amended claim 11 and claim 12 depend from independent claim 2, and claims 5 and 13 depend from independent claim 4; therefore, dependent claims 5, 6, and 11-13 patentably distinguish over the reference relied upon by the Examiner for at least the reasons discussed above, as well as additional reasons.

REJECTION OF CLAIM 15 UNDER 35 U.S.C. § 103(a) AS BEING UNPATENTABLE OVER TANABE et al. (U.S. PATENT NO. 5,705,906) IN VIEW OF JYUMONJI (U.S. PATENT NO. 5,987,591), AND FURTHER IN VIEW OF GOODFELLOW ET AL. (U.S. PATENT NO. 5,572,102)

In the Office Action, at page 7, numbered paragraph 8, claim 15 was rejected under 35 U.S.C. §103(a) as being unpatentable over Tanabe in view of Jyumonji and further in view of Goodfellow. This rejection is traversed and reconsideration is requested.

Independent 15 recites nearly identical language as claim 4; therefore, claim 15 patentably distinguishes over the references relied upon by the Examiner for at least the reasons discussed above.

CONCLUSION

Accordingly, in light of the above discussion and in view of the present amendment this application is believed to be in condition for allowance and an early and favorable action to that effect is respectfully requested. At a minimum, this amendment should be entered at least for purposes of appeal because it either clarifies and/or narrows the issues for consideration by the Board.

If there are any underpayments or overpayments of fees associated with the filing of this Amendment, please charge and/or credit the same to our Deposit Account No. 19-3935.

Respectfully submitted,

STAAS & HALSEY LLP

Date: 9-17-04
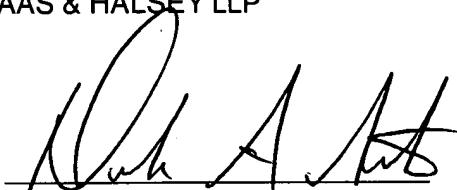
By: _____
Derek A. Auito
Registration No. 52,576

1201 New York Avenue, NW, Suite 700
Washington, D.C. 20005
Telephone: (202) 434-1500
Facsimile: (202) 434-1501

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